

Claims

1. A wireless communication system comprising a plurality of wireless terminal devices and a wireless communication management device for managing communication between the wireless terminal devices, wherein

said wireless communication management device comprises beacon transmission means for transmitting main beacons at a fixed interval to perform synchronization in said wireless communication system, wherein

said main beacon includes:

beacon time period information indicating a period of time until said main beacon is transmitted next; and
at least one of idle information to allow an unspecified wireless terminal device of said wireless terminal devices to perform transmission, polling information to make a specified wireless terminal device of said wireless terminal devices perform transmission, transmission notification information to make an advance notice of transmission of data after transmission of said beacon to a specified wireless terminal device of said wireless terminal devices, and transmission acknowledgement information indicating for a specified wireless terminal device of said wireless terminal devices whether reception

of data transmitted from the wireless terminal device was successful or unsuccessful.

2. The wireless communication system according to Claim 1, wherein

 said beacon transmission means transmits a sub beacon between said main beacons, the sub beacon including at least one of said idle information, said polling information, said transmission notification information and said transmission acknowledgement information, as well as including said beacon time period information.

3. The wireless communication system according to Claim 2, wherein

 each of said wireless terminal devices comprises:

 data division means for comparing said beacon time period information included in said main beacon or said sub beacon received, with a required transmission time of transmission data, and then dividing the transmission data so that transmission of the transmission data divided is finished before next transmission of said main beacon is started when the required transmission time is the beacon time period information or longer; and

data transmission means for transmitting said transmission data.

4. The wireless communication system according to Claim 1, wherein

one out of said plurality of wireless terminal devices serves as said wireless communication management device to manage communication between said plurality of wireless terminal devices.

5. A wireless communication management device for managing a wireless communication system for performing communication between a plurality of wireless terminal devices, said wireless communication management device comprising

main beacon transmission means for transmitting main beacons at a fixed interval to perform synchronization in said wireless communication system, wherein

said main beacon includes:

a beacon transmission time indicating a period of time until said main beacon is transmitted next; and

at least one of idle information to allow an unspecified wireless terminal device of said wireless terminal devices to perform transmission, polling information to make a specified wireless terminal device of

said wireless terminal devices to perform transmission, transmission notification information to make an advance notice of transmission of data after transmission of said beacon to a specified wireless terminal device of said wireless terminal devices, and transmission acknowledgement information indicating for a specified wireless terminal device of said wireless terminal devices whether reception of data transmitted from the wireless terminal device was successful or unsuccessful.

6. The wireless communication management device according to Claim 5, wherein

 said beacon transmission means transmits a sub beacon between said main beacons, the sub beacon including at least one of said idle information, said polling information, said transmission notification information, and said transmission acknowledgement information, as well as including said beacon time period information.

7. The wireless communication management device according to Claim 5, wherein

 one out of said plurality of wireless terminal devices serves as said wireless communication management device to manage

communication between said wireless terminal devices.

8. A wireless terminal device for performing wireless communication under the control of a prescribed wireless communication management device, said wireless terminal device comprising:

reception means for receiving main beacons that are transmitted at a fixed interval from said wireless communication management device and a sub beacon that is transmitted between the main beacons;

data division means for comparing beacon time period information that is included in said main beacon and said sub beacon received and indicates a period of time until said main beacon is transmitted next, with a required transmission time of transmission data, and when said required transmission time is said beacon time period information or longer, dividing said transmission data so that transmission of the transmission data divided is finished before next transmission of said main beacon is started; and

data transmission means for transmitting said transmission data.

9. A communication control method in a wireless communication

system comprising a plurality of wireless terminal devices and a wireless communication management device for managing communication between the plurality of wireless terminal devices, wherein

main beacons for performing synchronization in said wireless communication system are transmitted at a fixed interval from said wireless communication management device, wherein

said main beacon includes:

beacon time period information indicating a period of time until said main beacon is transmitted next; and
at least one of idle information to allow an unspecified wireless terminal device of said wireless terminal devices to perform transmission, polling information to make a specified wireless terminal device of said wireless terminal devices perform transmission, transmission notification information to make an advance notice of transmission of transmission data after transmission of said beacon to a specified wireless terminal device of said wireless terminal devices, and transmission acknowledgement information indicating for a specified wireless terminal device of said wireless terminal devices whether reception of data transmitted from the wireless terminal device was successful or unsuccessful.

10. The communication control method according to Claim 9,
wherein

a sub beacon is transmitted from said wireless communication management device between said main beacons, the sub beacon including at least one of said idle information, said polling information, said transmission notification information and said transmission acknowledgement information, as well as including said beacon time period information.

11. The communication control method according to Claim 10,
wherein

said wireless terminal device compares said beacon time period information included in said main beacon or said sub beacon received, with a required transmission time of transmission data, and when the required transmission time is the beacon time period information or longer, divides said transmission data so that transmission of the transmission data divided is finished before next transmission of said main beacon is started, and transmits the transmission data.

12. The communication control method according to Claim 9,
wherein

one out of said plurality of wireless terminal devices serves as said wireless communication management device to manage communication between said plurality of wireless terminal devices.